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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,367	04/02/2001	Minoru Myojo	10873.634USW	3639
23552	7590	10/08/2003	EXAMINER	
MERCHANT & GOULD PC			MACCHIAROLO, PETER J	
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MINNEAPOLIS, MN 55402-0903			ART UNIT	PAPER NUMBER
			2875	

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/762,367	MYOJO ET AL.
	<b>Examiner</b> Peter J Macchiarolo	<b>Art Unit</b> 2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 16 June 2003.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-6, 19 and 23-30 is/are rejected.
- 7) Claim(s) 7-18, 20-22 and 31-33 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Amendment*

1. The reply filed on December 23, 2002 consists of amendments to the independent claim, and further, the reply consists of remarks related to the prior rejection of claims in the Final Office Action, filed February 16, 2003. However, claims 1-33 are not allowable as explained below.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6, 19, 23-25, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai et al (USPN 5,034,661; "Sakurai") in view of Ward (USPN 4,205,258; "Ward") in further view of Miyazaki et al (USPN 5,773,937; "Miyazaki").
3. In regards to claim 1, Sakurai discloses in figure 1, a bulb (1') provided with a pair of electrode coils (3a', 3b') at both ends thereof, and each of the electrode coils mounted between two lead wires (not labeled) held by a bulb-end glass (not labeled).
4. Sakurai is silent to a means for preventing overheating.
5. However, Ward teaches that a means for preventing overheating (34, fuse) is present in a high-pressure HID lamp, and is mounted between the lead wires (32a, 32b, an HID equivalent of Sakurai's lead wires) located between the electrodes (16a, 16b, an HID equivalent of Sakurai's

electrode coils). Ward also teaches the fuse melts and retains its molten state to connect the lead wires electrically just after the electrodes malfunction at the end of a life of the lamp, and this configuration, is reliable and safely ends the life of the lamp<sup>1</sup>.

6. The Examiner notes that although Ward's fuse is directed to a high pressure lamp (HID), and not to a fluorescent lamp, one of ordinary skill in the art would modify Ward's fuse to operate in Sakurai's fluorescent lamp, since high-pressure mercury HID lamps and low pressure fluorescent lamps can have the same applications and elements as evidenced by Miyazaki<sup>2</sup>. Mounting Ward's fuse inside Sakurai's bulb and between the lead wires, so the fuse connects the lead wires just before or after Sakurai's electrode coil is disconnected, would be obvious, because one or ordinary skill in the art will recognize that this configuration will make Sakurai's lamp safer, and there exists a large demand for increasingly safe fluorescent lamps.

7. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Sakurai's fluorescent lamp with Ward's means for preventing overheating, since Miyazaki teaches high-pressure mercury HID lamps and low pressure fluorescent lamps can have the same applications and elements, and this fuse configuration is a safe and reliable system which will meet certain market demands.

8. In regards to claims 2-6, Sakurai, Ward, and Miyazaki teach all of the recited limitations of claim 1 (above).

9. Ward further teaches in figures 1 and 2 that the means for preventing overheating includes a glass member (44) and a first and second metallic pin (32b and 36) for supporting the

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<sup>1</sup> Ward, col. 2, ll. 37-51, and col. 1, ll. 19-21.

glass member, and one end of the first metallic pin (36) is connected to the lead wires, respectively, and the first and second pin are connected not in contact with each other. Ward further teaches in figure 2 that the ends of each of the first and the second metallic pins are space apart via the glass member, and the first metallic pin (36) is wrapped around the glass member, while the other pin (32b) is positioned in the glass. Ward further teaches that this configuration is reliable and safely ends the life of the lamp<sup>3</sup>.

10. Sakurai, Ward, and Miyazaki are silent to one end of the second metallic pin being connected to the lead wire, and the other end of the first metallic pin being positioned in the glass member.

11. However, it is obvious in the art that positioning pin 36 in the glass member will provide physical stability and improve its resistance to damaging vibrations.

12. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Sakurai's fluorescent lamp with Ward's means for preventing overheating configuration, including pin 36 being positioned in the glass member, since it is obvious in the art that that positioning pin 36 in the glass member will provide physical stability and improve its resistance to damaging vibrations and Ward teaches this configuration is reliable and safely ends the life of the lamp.

13. In regards to claim 19, Sakurai, Ward, and Miyazaki teach all of the recited limitations of claim 2 (above).

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<sup>2</sup> Miyazaki, col. 25, ll. 36-50.

<sup>3</sup> Ward, col. 2, ll. 37-51, and col. 1, ll. 19-21.

14. Ward further teaches that a layer of barium flashed during gettering may be adhered to the surface of the outer glass member to prevent an electrical short of the arc tube<sup>4</sup>. Ward further teaches that this configuration is reliable and safely ends the life of the lamp.

15. Sakurai, Ward, and Miyazaki are silent to the layer of barium being heat resistant.

16. However, one of ordinary skill in the art will recognize that this layer of barium will resist heat.

17. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Sakurai's fluorescent lamp with Ward's means for preventing overheating configuration, including a layer of non-conductive inorganic heat resistant material, since it is obvious that this layer of barium will resist heat, and Ward teaches that this configuration is reliable and safely ends the life of the lamp.

18. In regards to claim 23, Sakurai, Ward, and Miyazaki teach all of the recited limitations of claim 2 (above).

19. Ward further teaches in column 3 lines 2-16 that a layer of barium flashed during gettering may be adhered to the surface of the outer glass member to prevent an electrical short of the arc tube. Ward further teaches column 1 lines 19-21 that this configuration is reliable and safely ends the life of the lamp.

20. Sakurai, Ward, and Miyazaki are silent to the layer of barium being deposited on the surface of the metallic pin, or that barium has a lower work function than the pin.

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<sup>4</sup> Ward, col. 3, ll. 2-16

21. However, one of ordinary skill in the art will recognize that during the process of depositing barium on the surface of the glass member, barium will converge onto the metal pin, and the lamp will still reliable and safely ends the life of the lamp. Further, one of ordinary skill will recognize that the barium layer must have a lower work function than the pin in order for the lamp to operate correctly.

22. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Sakurai's fluorescent lamp with Ward's means for preventing overheating configuration, including a substance having a lower work function attached to a surface of the metallic pin, since one of ordinary skill in the art will recognize that during the process of depositing barium on the surface of the glass member, barium will converge onto the metal pin, and further, one of ordinary skill will recognize that the barium layer must have a lower work function than the pin in order for the lamp to operate correctly, and Ward teaches that this configuration is reliable and safely ends the life of the lamp.

23. In regards to claims 24-27, Sakurai, Ward, and Miyazaki teach all of the recited limitations of claim 1 (above).

24. Ward further teaches in figure 2, the means for preventing overheating includes a glass member (44) mounted between the lead wires (32a, 32b) and a the first metallic pin 36 will prevent the glass member from falling from the lead wires during melting. Ward further teaches that the means for preventing falling (36) is a metallic band provided on a circumference of the glass member, and this configuration reliable and safely ends the life of the lamp.

25. Sakurai, Ward, and Miyazaki are silent to the electrical volume resistance of the glass member being lower than that of the bulb-end glass.
26. However, it is known in the art that a lower electrical volume resistance is equivalent to a lower melting temperature. It is obvious that for this configuration to work in a fluorescent lamp, the glass member, which is intended to melt, should not have a higher melting temperature than the bulb-end glass.
27. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Sakurai's fluorescent lamp with Ward's means for preventing overheating configuration, wherein the means for preventing overheating includes a glass member having an electrical volume resistance lower than that of the bulb-end glass, since it is obvious that for this configuration to work in a fluorescent lamp, the glass member, which is intended to melt, should not have a higher melting temperature than the bulb-end glass.
28. In regards to claims 28-30, Sakurai, Ward, and Miyazaki teach all of the recited limitations of claim 1 (above).
29. Ward further teaches in figure 2, the means for preventing overheating includes a glass member (44) and an electrical conduction between the lead wires through the glass member (44) and an electrical conduction between the lead wires through the glass member is continued just before the electrode coils are disconnected. Ward further teaches in column 3 lines 2-16 that a layer of barium flashed during gettering may be adhered to the surface of the outer glass member to prevent an electrical short of the arc tube. Ward further teaches column 1 lines 19-21 that this configuration will safely extinguish destructive power arcs.

30. Sakurai, Ward, and Miyazaki are silent to the layer of barium being heat resistant and deposited on the surface of the bulb-end glass, and the means for preventing overheating is located closer to the electrode coil than to the bulb end glass.

31. However, one of ordinary skill in the art will recognize that this layer of barium will resist a small amount of heat, and it is obvious that this configuration will best perform if the means for preventing overheating is located closer to the electrode coil than to the bulb end glass which is coated with a heat resistant layer in a fluorescent lamp.

32. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Sakurai's fluorescent lamp with Ward's means for preventing overheating configuration, including a layer of barium being heat resistant and deposited on the surface of the bulb-end glass, and the means for preventing overheating is located closer to the electrode coil than to the bulb end glass, since one of ordinary skill in the art will recognize that this layer of barium is heat resistant, and this configuration will best perform if the means for preventing overheating is located closer to the electrode coil than to the bulb end glass which is coated with a heat resistant layer in a fluorescent lamp.

#### *Response to Arguments*

33. Applicant's arguments filed June 16, 2003 have been fully considered. The Examiner appreciates Applicant's comments, however, additional prior art in the form of Sakurai and Miyazaki have been applied in order to anticipate Applicant's amended independent Claim 1.

34. Therefore, in response to Applicant's arguments that Ward fails to disclose that the fuse is mounted between the lead wires; the fuse connects the electrical leads just before or after an

electrode coil is disconnected; and the fuse means is provided inside of the arc tube, the Examiner respectfully directs Applicant to rejected claim 1 (above).

35. In response to Applicant's argument that Ward fails to disclose that the fuse "retains its molten state," as required by claim 1, the Examiner respectfully directs Applicant to column 2, lines 48-50 of Ward. Ward discloses that the insulating sleeve means 42 melts and fuses the fusible element 36 to the electrical conductor 32b. This indicates that the fuse will retain its molten state.

### *Conclusion*

36. Claims 7-18, 20-22, and 31-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, as mentioned in the previous office action filed February 16, 2003.

37. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

38. U.S. Patents 3,969,279 to Kern, and 5,610,477 to Ivanov et al are further evidence that fluorescent lamps and high pressure lamps can have the same application and elements, i.e. a fluorescent lamp with a filament including a HID's means for preventing overheating.

39. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (703) 305-7198. The examiner can normally be reached on 7:30 - 4:30, M-F.

40. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

41. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

pjm



Sandra O'Shea  
Supervisory Patent Examiner  
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